

REMARKS/ARGUMENTS

In the office action dated November 4, 2003, the Examiner rejected claims 23-25, 28-34, 38-41, 43-44, 47, 49-50, 52, and 65-68 under 35 U.S.C. § 102(b) as anticipated by *Nguyen* (U.S. 5,494,123) or *Coates* (Re. 32,495), and rejected claims 48 and 51 under 35 U.S.C. § 103 as obvious in view of either *Nguyen* or *Coates*. The Applicant notes with appreciation the Examiner's indication that claims 26, 27 and 42 are allowed, and claims 35, 36, 45 and 46 contain patentable subject matter. Claims 35, 36, 45 and 46 have been re-written in independent form and are thus believed to be in form for allowance. Claim 45 recites that the sidewall forms part of the nozzle boss.

Reconsideration for the pending claims is respectfully requested.

I. THE REJECTION OF CLAIMS 23-25, 28-34, 38-41, 43-44, 47, 49-50, 52, AND 65-68 UNDER 35 U.S.C. § 102(B) AS ANTICIPATED BY *NGUYEN* OR *COATES*

The Examiner rejected claims 23-25, 28-34, 38-41, 43-44, 47, 49-50, 52, and 65-68 under 35 U.S.C. § 102(b) as anticipated by *Nguyen* or *Coates*. In particular, the Examiner contends that all the features previously recited in claim 23 are shown by either *Nguyen* or *Coates*. The Applicant would respectfully caution the Examiner that Figures contained in previous patents or publications can be misleading and difficult to interpret. This is true in the varying cases of, e.g., when trying to determine angular relationships in a perspective drawing (which are drawn so that all lines converge at some "distant" point), where there is no assurance that the drawings are to scale in the patents or publications, where the feature being relied upon in the drawings to reject claims is not a portion of the drawings discussed in the specification, or where the explanation in the patent or publication seems to be inconsistent with the drawings.

Claim 23: Claim 23 has been amended in order to focus on the mud ramp feature. First, claim 23 has been amended to recite first and second sections connected serially, the first and

second sections being disposed at different angles. Support for this amendment may be found at least at page 5, lines 16-17 of the specification. As recited, the first and second sections have been specified as being arranged serially in order to avoid confusion that might arise in interpreting a three-dimensional drill bit. For example, a curved surface like a projected onto a two-dimensional page with lines may be straight with respect to a reference line, but the lines meant to depict depth might be misleading. As is apparent from the specification, this is not the same as a mud flow ramp that includes different sections at different angles, each at a different “height” of the drill bit. *See*, e.g., Figures 7A and 7B, where the angular measurement of interest is made with respect to the front (as viewed in the Figures) edge of the mud flow ramp. In order to provide further clarity, claims 97 and 98 have been added that recite that the measurement of angles is made with respect to the peripheral edge of the mud flow ramp.

Second, claim 23 has been amended to recite that the angles of first and second sections are measured from a line perpendicular to the longitudinal axis, instead of the longitudinal axis as previously recited. This amendment is made because this is how the angles are measured in the specification and it was thought best to remain consistent between claim 23 and the specification. Support for this amendment may be found at page 16, lines 3-4 of the specification.

Third, claim 23 has been amended to recite the presence of inserts from 150 to 180 degrees around the circumference of the drill bit. Support for this amendment may be found in the specification at page 20, line 10 - page 21, line 5. As explained there, inserts extending substantially to gage diameter around the circumference of the drill bit are expected to improve the hydro-lifter performance of the drill bit by reducing the flow and recycling of drilling mud to the bottom of the borehole.

Language in claim 23 unrelated to defining the mud flow ramp has been deleted.

This amendment is believed to distinguish both of *Nguyen* and *Coates*. Neither of *Nguyen* nor *Coates* shows two sections, each at a different angle, in their “mud flow ramp”.

The Examiner identified surface 48 in *Nguyen*, Figure 1, as a mud flow ramp. Claim 23 is believed to be distinguished from *Nguyen* because as shown in Figure 1 of *Nguyen*, surface 48 appears to be a straight line (as measured with respect to a line perpendicular to the longitudinal axis, or the longitudinal axis for that matter). As a single straight line, it does not have two sections, each at a different angle to a line perpendicular to the longitudinal axis (as now recited in claim 23).

The Examiner identified surface 22 in *Coates*, Figure 3, as a mud flow ramp. Claim 23 is believed to be distinguished from *Coates* because as shown in Figure 1 of *Coates*, any given path from the bottom of the leg to the top of the leg along surface 22 appears to be a straight line (as measured with respect to a line perpendicular to the longitudinal axis). As a straight line, it does not have two sections, each at a different angle to a line perpendicular to the longitudinal axis (as now recited in claim 23).

Allowance of claim 23 is respectfully requested.

Claim 24: Claim 24 includes language deleted from claim 23. Claim 24 recites that the junk slot recited in claim 23 as defined by the mudflow ramp and the drill bit body is, in fact, defined in part by a nozzle boss sidewall (reference is made to Figures 7A-7C and 8A-8F of the instant application; reference numeral 20 identifies the sidewall of the nozzle boss).

Claims 28-36, 74: Claims 28-36 each recite specifics for the first and second sections as recited in amended claim 23. Claims 35 and 36 have been indicated as allowable and therefore will not be discussed.

Claim 28 recites the first and second sections as being straight, with the first and second sections being at different angles to the line perpendicular to the longitudinal axis. As stated above, although *Nguyen* may illustrate a “mud ramp” that is straight, the *Nguyen* patent does not illustrate two straight sections at different angles to a line perpendicular to the longitudinal axis of the bit, or suggest that such a structure would be desirable. Likewise, *Coates* does not teach or suggest two straight sections for his “mud ramp” at different angles to a line perpendicular to the longitudinal axis of the bit.

Claim 74, dependent on claim 28, recites that the second section is at an angle greater to the perpendicular line than the first section. Support for this claim may be found in the application at page 16, lines 1-3. Certainly, neither *Nguyen* nor *Coates* teaches a mud ramp that includes a more “horizontal” section closer to the bottom of the drill bit and a more “vertical” section closer to the top.

Allowance of claim 28, as well as claims 29-32 and 74, dependent upon claim 28, is respectfully requested.

II. NEW CLAIMS 69-103

New claim 69 recites a portion of the mud flow ramp being at an angle from 30 to 80 degrees. Support may be found at page 16, line 7 of the specification.

New claim 70 recites a pin shoulder proximate the top of the drill bit body and a mud flow ramp with a constant width. Support for this claim may be found at page 14, lines 10-11 and page 17, lines 11-14.

Claim 71 recites a pin shoulder proximate the top of the drill bit body. Support may be found at page 17, lines 11-14.

Claim 73 and 74 each recite that the second section is at an angle greater to the perpendicular line than the first section. Support for these claims may be found in the application at page 16, lines 1-3.

Claims 76 and 77 correspond to previous (and allowable) claims 35 and 36, but depend from amended claim 23.

Claims 78 - 91 recite aspects of the embodiment shown in Figures 7A, 9A – 11B and as described generally from page 20, line 10 to page 21, line 5.

Claims 92-96 are previous claims 53-57, which were inadvertently cancelled as being drawn to a non-elected invention. These claims were not restricted from the case.

Claims 97-98 specify that the angles are measured with respect to the peripheral edge of the mud flow ramp, as is shown in various Figures in the specification.

Claims 99-102 recite features of the inserts on the side of the drill bit as explained with reference to Figures 9A and 9B, as well as from page 20, line 10 to page 21, line 11.

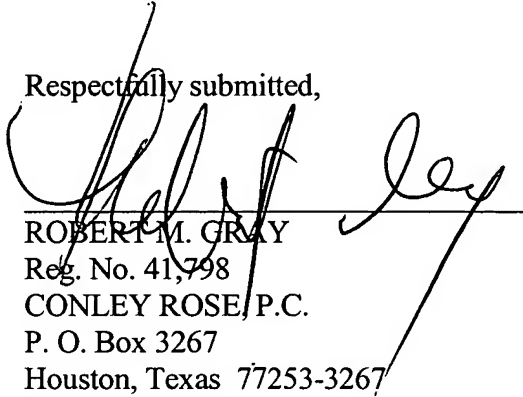
Allowance for all these claims is respectfully requested.

III. CONCLUSION

Allowance of the pending claims is respectfully sought. If the Examiner has any questions or requests, he is invited to contact the undersigned.

Should any fees have been inadvertently omitted, or if any additional fees are required or have been overpaid, please appropriately charge or credit those fees to Deposit Account Number 03-2769 of Conley Rose, P.C., Houston, Texas.

Respectfully submitted,



ROBERT M. GRAY
Reg. No. 41,798
CONLEY ROSE, P.C.
P. O. Box 3267
Houston, Texas 77253-3267
(713) 238-8000
ATTORNEY FOR APPLICANT